Management of Hazardous Waste for School Districts

Presented by: Paul Nielsen & Roxanne Pedersen – NRC Alaska
Association of Alaska School Boards and APEI
4th Annual Maintenance Employees Conference
Anchorage, AK October 18, 2017

Set Up a Good Waste Management System

1. Identify all wastes generated
   - Determine which ones are hazardous waste
2. Determine pounds of HW per month
   - Keep records
3. Identify options for getting rid of waste including used oil
4. Identify HW management standards
5. Train staff on waste management
6. Minimize waste/recycle

Today’s Presentation

- EPA Regulations for Hazardous Waste
- Best Practices
- Used Oil
- Universal Waste
- Lab Packs
- Disposal Methods
- Packaging and shipping
- Summary Recommendations for success

Resource Conservation and Recovery Act (RCRA)

- National hazardous waste law
- Passed by Congress in 1976
- Was established to prevent contaminated sites
- It set standards for management of all waste and used oil
Hazardous waste at your Site can be harmful to you and your environment
- Pesticides, Herbicides and many solvents may cause cancer and lung disease
- Toxic Heavy Metals bioaccumulate. Low exposure over time can poison you and they are deadly to fish

The SDS can be found on the manufacturer's website
- Note that the waste may change through use, so don't rely on the SDS as your only source of info

You may also send a sample of the waste to a lab to determine if it is hazardous waste
- Talk to your hazardous waste vendor
**Mixture Rule**

- Don’t mix hazardous waste with other wastes
- One drop of F-listed carburetor cleaner in your drum of used oil = whole drum is F-listed hazardous waste

**Best Practice:**

Don’t spray brake cleaner or carburetor cleaner over your used oil drum or parts washer

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**Identify Hazardous Waste by “Generator Knowledge”**

- A Site can use their knowledge of the waste to determine if it is hazardous waste.
- Knowledge must be based on some waste analysis:
  - Manufacturer’s SDS for the product
  - Prior waste analysis
  - Product labels
  - Knowledge of use of product

If you know your waste is a hazardous waste, document your knowledge and keep a record of it – Waste Profile

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**Hazardous Waste Generators**

- A hazardous waste generator is the person (you and your Site) who creates the waste
- There are 3 classes of generators based on the amount of hazardous waste generated in a month

<table>
<thead>
<tr>
<th>Generator Class</th>
<th>Amount Generated in One Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Small Quantity Generators (VSQG)</td>
<td>220 pounds or less</td>
</tr>
<tr>
<td>Small Quantity Generators (SQG)</td>
<td>between 220 and 2,200 pounds</td>
</tr>
<tr>
<td>Large Quantity Generators (LQG)</td>
<td>2,200 pounds or more</td>
</tr>
</tbody>
</table>

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**How Much Hazardous Waste Do You Generate?**

- **Hazardous waste in liquid form:**
  - Weigh the container of waste and subtract the weight of the empty container, or
  - Convert gallons to pounds by multiplying the volume of the waste with the specific gravity of the waste
- **Hazardous waste in solid form:**
  - Weigh the container of waste and subtract the weight of the empty container

**55 Gal Drum:**
- Full = ~450 lbs
- Half Full = ~225 lbs
  (based on the weight of water)
Storing Waste Best Practice

Keep containers of waste indoors.
Drums exposed to extreme weather conditions may freeze, expand and burst or draw in rainwater sitting on the lids.

- Bulging and Weathered Drums
- Standing Water

Hazardous Waste Best Practices

- Do not mix hazardous waste with other wastes.
- Take time to identify all waste.
- Count waste to figure out your generator class.
- Keep waste in containers.
- Label containers of hazardous waste with the words “hazardous waste” and include the date that you started accumulating the waste.
- Make sure that the waste you ship goes to a proper hazardous waste facility.
- Look for ways to recycle hazardous waste at your Site.
- Talk to your hazardous waste vendor.

Aerosol Cans

- If your can is partially full and/or pressurized = hazardous waste.
- Depressurize your aerosol cans with a can puncture unit.
- If the product is a hazardous waste then empty contents into a hazardous waste container.
- Recycle empty cans as scrap metal.
- Do not put pressurized aerosol cans in the trash.

Antifreeze and Heat Transfer fluid

- Used antifreeze that picks up lead and other metals from the cooling system = hazardous waste.
- Recycle your antifreeze offsite.
Lead Acid Batteries

- Lead acid batteries = hazardous waste
- What do you do with them?
  - Return to vendor to be reconditioned
  - Managed them as hazardous waste and send them to a permitted hazardous waste facility
  - Manage them as universal waste batteries (to be discussed soon)

Used Oil Definition

Used oil is NOT "hazardous waste" if it is sent for recycling or burned to heat your site (or other energy recovery)

Includes:
- Used crank case oil
- Used oil rags that are not laundered
- Used oil filters that are not drained
- Dripping oil spill absorbent material
- Used transmission fluid
- Used brake fluid
- Hydraulic oil
- Vacuum pump oil

Used oil cannot be mixed with hazardous waste

How to Manage Used Oil

- Burn it for energy recovery or Recycle it
- Disposal is prohibited!

- Label tanks and containers with the words “Used Oil” (not “waste oil”)
- Don’t transport more than 55 gallons offsite yourself (unless you are a used oil transporter with a RCRA ID#)
- Keep records of your offsite shipments
- Use absorbents to clean up spills as soon as possible
- Don’t mix other waste with used oil

Oil Spills Happen!

- Clean up spilled oil immediately with absorbents
- Stop the leak or spill from getting worse
- Use enough absorbents to absorb all liquid oil
- Scoop up the used absorbent and as long as it’s not dripping with oil, dispose of it in the trash
- If hazardous waste also spilled, treat the absorbent material as hazardous
Filters
- Punctured and hot drained filters = scrap metal

Rags
- Dripping with oil – wring them out into container
- Not dripping with oil - send to industrial laundry and reuse

Absorbent material for a used oil spill
- If it’s sopping wet – add more absorbents
- If it’s not dripping – throw it in the trash
- If hazardous waste was also spilled – absorbents are hazardous waste

Burning Used Oil for Heat In Your Shop
You can burn used oil in your shop without a permit if:
1. It is generated in your shop or collected from do-it-yourselfers, and
2. It is burned in a space heater that is less than 500,000 BTUs and vented to the ambient air

You cannot burn used oil in your shop if it contains hazardous waste

Used oil can only be burned in the shop where it is generated, unless......

Burning Your Oil at Another Site
If you want to send your used oil to another Site for burning, your used oil has to meet these specifications (be “on spec”) for burning without a permit:

<table>
<thead>
<tr>
<th>Constituent or Property</th>
<th>Allowable level for burning without a permit</th>
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<td>Arsenic</td>
<td>5 ppm maximum</td>
</tr>
<tr>
<td>Cadmium</td>
<td>2 ppm maximum</td>
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<tr>
<td>Chromium</td>
<td>10 ppm maximum</td>
</tr>
<tr>
<td>Lead</td>
<td>100 ppm maximum</td>
</tr>
<tr>
<td>Flash point</td>
<td>100 F maximum</td>
</tr>
<tr>
<td>Total halogens (F, Cl, Br, and/or I)</td>
<td>4,000 ppm maximum</td>
</tr>
</tbody>
</table>

If exceeded, the used oil is likely Hazardous Waste

Burning Your Oil at Another Site
- Used oil from your Site can be burned at another location only if it is determined to be “on spec”
- The simplest and most sure way to determine if your oil is “on spec” is to send a sample to a lab
- The rules don’t specify who is responsible to make the “on spec” determination. Someone must do it and the person who does it is a “used oil marketer” and needs to get an EPA ID number.

Used oil cannot be burned at another Site without making the “on spec” determination
**Burning “Off Spec” Used Oil at Another Location**

- Can only be burned in industrial furnaces and boilers
- Need a permit:
  - RCRA Hazardous Waste Incinerator Permit, and/or
  - Clean Air Act Permit

**Recycling Used Oil**

Used oil that is not burned in your shop or at another location must be recycled

- Send it to a recycler (Recyclers typically remove water and contaminates from oil and blend it into fuels)
- Send it to a re-refiner to be processed into lubricating oil

**Halogen in Used Oil**

It may be illegal to burn used oil if it contains halogens

- Some shop solvents and cleaners contain fluorine, chlorine or bromine (halogens)
- Over 1,000 ppm halogen in your used oil = hazardous waste
- Halogens can come from non-hazardous waste sources

Are halogens from non-hazardous waste sources (like salt water in a seaplane engine)? If yes:
- Recycle the used oil, or
- Burn it for heat (if less than 4,000 ppm)

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<tr>
<td>Lead</td>
<td>100 ppm maximum</td>
</tr>
<tr>
<td>Mercury</td>
<td>125 ppm maximum</td>
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<tr>
<td>Total halogen (F, Cl, Br, and/or I)</td>
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**Universal Waste**

EPA created “Universal Waste” to encourage recycling of frequently generated lower hazard waste

- Batteries –including lead acid batteries
- Pesticides
  - Suspended and canceled subject to a recall
  - Collected as part of a collection program
- Mercury containing equipment
  - Switches & thermostats
- Hazardous waste lamps
How to Manage Universal Waste

- Store in closed containers
- Label containers with the words “universal waste” and the type of waste (i.e. universal waste – batteries)
- Store universal waste for no more than one year
- Record the date when storage began
- Use a universal waste transporter for off-site shipment. The universal waste must be shipped to a hazardous waste recycler or a permitted hazardous waste facility
- Train staff handling universal waste on these requirements
- Don’t throw universal waste in the trash

Bulb Best Practices

- Collect bulbs in a container made for a bulb
- Don’t break bulbs
- Send bulbs to a recycler
- If you must crush:
  - Determine if it’s hazardous waste
  - If yes, manage the waste as if you were a SQG or LQG

Labpacking

- Consolidation of Compatible/Similar Hazard Class Material
- Completion of Labpack Inventory Sheets
- Individual Containers are Placed Right Side Up in an Overpack Drum/Box
- Cushioning/Absorbent Material Used to Fill Voids to Prevent Breakage/Absorb Leaks

Labpack inventory sheet
Steps to take after labpack inventory sheet is completed

- Make Copy of Labpack Sheet
  - 1 Copy for the Customer Service Rep to use for Profiling and Manifesting
  - 1 Copy Goes onto Drum Inside Packing Envelope

- Proper Labeling and Marking of Drum
  1. Marker (Haz, Non-RCRA/DOT, Non-Haz)
  2. Hazard Class Label, Sometimes Subsidiary Hazard Class Label is Necessary
  3. Orientation Labels, if Liquids Present
  4. "Inside Containers Comply with Prescribed Regulations" Label
  5. Copy of Labpack Sheet in Packing Envelope

Recordkeeping

- Sites must be able to prove that you’re following waste management rules
- Keep records of:
  - Waste designation (which wastes are hazardous, used oil, universal waste, etc.)
  - Waste generation amounts per month
  - Shipping records for off site shipments for waste or used oil
  - Training records
  - Inspection logs
  - Waste accumulation start dates (can be kept on the container label)

Tips to Reduce Waste

The easiest way to simplify hazardous waste management is to not generate it in the first place

- Don't mix wastes – a small amount of hazardous waste mixed with a non-hazardous waste makes it all hazardous waste
- Recycle or reuse material as much as possible – some recycled wastes are exempt from hazardous waste rules
- Change your process or materials to use less hazardous products
- Don't buy more than you need
- Store hazardous materials to minimize the potential for spills

HAZARDOUS WASTE TREATMENT AND DISPOSAL METHODS

Paint, Solvent, Intact Batteries, Antifreeze
Recycle-Reuse
HAZARDOUS WASTE TREATMENT AND DISPOSAL METHODS

Oil, Fuels, Petroleum Distillates
Local energy Recovery

HAZARDOUS WASTE TREATMENT AND DISPOSAL METHODS

Acids, Caustics, Bases, Cleaners
Treatment / Neutralization

HAZARDOUS WASTE TREATMENT AND DISPOSAL METHODS

Toxic, Reactive and Persistent
Secure Landfill Disposal

HAZARDOUS WASTE TREATMENT AND DISPOSAL METHODS

Explosive, Biological, Infective
Destructive Incineration
DOT Training Requirements 172.704

- Requires employers to provide all hazmat employees training
- General awareness/familiarization training
- Function-specific training
- Safety training
- Security awareness training
- Alternative training can be OSHA, EPA or other training that complies

Label Examples

Drum Label Example

- Right
- Wrong

Package Labeling Example
Single Product Packaging

Overpack

Combination Packaging

Composite Packaging
Hazardous Waste Shipping Papers

Haz Mat Shipping Papers

Shipping Papers

Violations are Expensive
Next Steps

- Inventory waste in your Site and identify the hazardous waste, universal waste, and used oil
- Weigh your hazardous waste and count the amount each month to determine your generator class
- Have a plan for managing your waste:
  - Local hazardous waste collection program
  - Commercial Hazardous waste management company
  - Recycler
- Look for non-hazardous substitutes
- Train everyone on your team on how to manage waste

**Talk to your hazardous waste vendor**

**THANK YOU!**